

Remarks

Reconsideration of this Application is respectfully requested.

I. Status of the Claims and Support for the Amendment

Claims 1, 22, 24, 31, 37, 40 and 43 have been amended. Claims 18, 19, 23, 30, 38 and 39 have been canceled. Claims 44 and 45 have been added. Claims 1, 3-17, 20-22, 24-28, 31-35, 37 and 40-45 are pending in the application, with claims 1, 22 and 31 being the independent claims.

Support for the amendment of claim 1 is found in the Specification at page 2, paragraph [0006]; and in original claims 18 and 19.

Support for the amendment of claim 22 is found in the Specification at page 2, paragraph [0006].

Support for the amendment of claim 31 is found in the Specification at page 13, paragraph [0026], line 1; page 17, paragraph [0037] to page 19, paragraph [0042].

Support for the amendment of claims 37 and 43 is found in the Specification at page 17, paragraph [0038], line 4.

Support for the amendment of claim 40 is found in the Specification at page 18, last line.

Support for new claims 44 and 45 is found in the Specification at page 2, paragraph [0006]. Claim 44 replaces claim 30.

It is believed that no new matter has been added by these amendments, and their entry is respectfully requested.

I. The Rejections Under 35 U.S.C. § 102 Over Grace Should Be Withdrawn

At page 2 of the Office Action, the Examiner rejected claims 1, 3-28, 30-35 and 37-43, under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 4,892,893 to Grace *et al.* (hereinafter "Grace '893"). Applicants respectfully traverse this rejection.

A. Claims 1, 3-21, 41 and 42

Claims 18 and 19 have been canceled. With respect to claims 1, 3-17, 20, 21, 41 and 42, Applicants provide the following remarks. Independent claim 1 has been amended herein to recite a polyurethane foam comprising less than about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the foam passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, wherein the melamine is ground melamine, and wherein the ground melamine has a volume average particle size distribution of 100% ≤ about 74 microns, 75% ≤ about 19.25 microns, 50% ≤ about 12.28 microns, 25% ≤ about 6.84 microns, 0% ≤ about 0.83 microns.

Grace '893 fails to teach a polyurethane foam that contains ground melamine having the size distribution recited in claim 1. Therefore, Grace '893 fails to teach the polyurethane foam of claim 1.

Claims 3-17, 20, 21, 41 and 42 depend, either directly or indirectly, from independent claim 1. Hence, for at least the same reasons that Grace '893 fails to teach the polyurethane foam of claim 1, Grace '893 fails to teach the polyurethane foam of claims 3-17, 20, 21, 41 and 42.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

B. Claims 22-28

Claim 23 has been canceled. With respect to claims 22 and 24-28, Applicants provide the following remarks.

As amended herein, independent claim 22 recites a slab stock process for making a polyurethane foam comprising adding from about 5 to about 10 weight percent ground melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the melamine has a mean particle size of about 28 microns or less, wherein the foam produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, and wherein the ground melamine has a volume average particle size distribution of 100% \leq about 74 microns, 75% \leq about 19.25 microns, 50% \leq about 12.28 microns, 25% \leq about 6.84 microns, 0% \leq about 0.83 microns.

Grace '893 fails to teach a slab stock process for making a polyurethane foam using ground melamine having the size distribution recited in claim 22. Therefore, Grace '893 fails to teach the process of claim 22.

Claims 24-28 depend, either directly or indirectly, from independent claim 22. Hence, for at least the same reasons that Grace '893 fails to teach the process of claim 22, Grace '893 fails to teach the process of claims 24-28.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

C. Claims 30-35, 37-40 and 43

Claims 30, 38 and 39 have been canceled. With respect to claims 31-35, 37, 40 and 43, Applicants provide the following remarks.

Claim 31 has been amended herein to recite a carbon dioxide frothing process for making a polyurethane foam composition comprising adding from about 5 to about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam; mixing a melamine and polyol pre-blend under high shear prior to foaming to form a blend; removing melamine agglomerations from the blend by filtering the blend through a first filter; injecting liquefied carbon dioxide into the blend; mixing the blend; filtering the blend through a second filter; and conveying the blend into a gate bar, wherein the foam composition produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test.

Grace '893 fails to teach a carbon dioxide frothing process in which liquified carbon dioxide is injected into a blend that contains melamine and a polyol. Grace '893 also fails to teach a process in which the blend is conveyed into a gate bar. Therefore, for at least these reasons, Grace '893 fails to teach the process of claim 31.

Claims 32-35, 37, 40 and 43 depend, either directly or indirectly, from independent claim 31. Hence, for at least the same reasons that Grace '893 fails to teach the process of claim 31, Grace '893 fails to teach the process of claims 32-35, 37, 40 and 43.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

II. The Rejection Under 35 U.S.C. § 103 Over Grace In View Of Eiben and Webster Should Be Withdrawn

At page 5 of the Office Action, the Examiner rejected claims 1, 3-28, 30-35 and 37-43, under 35 U.S.C. § 103(a), as allegedly obvious over Grace '893 in view of U.S. Patent No. 5,789,457 to Eiben *et al.* (hereinafter "Eiben") and U.S. Patent No. 3,862,921 to Webster *et al.* (hereinafter "Webster"). Applicants respectfully traverse this rejection. A *prima facie* case of obviousness has not been established.

A. Claims 1, 3-21, 41 and 42

Claims 18 and 19 have been canceled. With respect to claims 1, 3-17, 20, 21, 41 and 42, Applicants provide the following remarks. Independent claim 1 has been amended herein to recite a polyurethane foam comprising less than about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the foam passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, wherein the melamine is ground melamine, and wherein the ground melamine has a volume average particle size distribution of 100% ≤ about 74 microns, 75% ≤ about 19.25 microns, 50% ≤ about 12.28 microns, 25% ≤ about 6.84 microns, 0% ≤ about 0.83 microns.

A *prima facie* case of obviousness has not been established, because even in combination, Grace '893, Eiben and Webster would not have suggested a polyurethane foam that contains ground melamine having the size distribution recited in claim 1. Grace '893 relates to polyurethane foams. Eiben relates to the use of carbon dioxide as an expanding agent, but does not disclose melamine. Webster relates to a process for the production of a polymer, but does not disclose melamine.

One of ordinary skill in the art would not have been motivated to modify the disclosure of Grace '893, Eiben and Webster in an attempt to obtain the claimed polyurethane using the claimed ground melamine size distribution. Moreover, even in combination, Grace '893, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed polyurethane foam using the claimed size distribution of ground melamine.

Claims 3-17, 20, 21, 41 and 42 depend, either directly or indirectly, from independent claim 1. Hence, for at least the same reasons that Grace '893, Eiben and Webster would have failed to suggest the polyurethane foam of claim 1, Grace '893, Eiben and Webster would have failed to suggest the polyurethane foam of claims 3-17, 20, 21, 41 and 42.

A *prima facie* case of obviousness has not been established. Applicants respectfully request that this rejection be reconsidered and withdrawn.

B. Claims 22-28

Claim 23 has been canceled. With respect to claims 22 and 24-28, Applicants provide the following remarks.

As amended herein, independent claim 22 recites a slab stock process for making a polyurethane foam comprising adding from about 5 to about 10 weight percent ground melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the melamine has a mean particle size of about 28 microns or less, wherein the foam produced by the process passes the open flame resistance portion and the

smoldering resistance portion of the California 117 Burn Test, and wherein the ground melamine has a volume average particle size distribution of 100% \leq about 74 microns, 75% \leq about 19.25 microns, 50% \leq about 12.28 microns, 25% \leq about 6.84 microns, 0% \leq about 0.83 microns.

A *prima facie* case of obviousness has not been established, because even in combination, Grace '893, Eiben and Webster would not have suggested a slab stock process that employs ground melamine having the size distribution recited in claim 1.

One of ordinary skill in the art would not have been motivated to modify the disclosure of Grace '893, Eiben and Webster in an attempt to obtain the claimed process, which employs a particular ground melamine size distribution recited. Moreover, even in combination, Grace '893, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed process using the claimed size distribution of ground melamine.

Claims 24-28 depend, either directly or indirectly, from independent claim 22. Hence, for at least the same reasons that Grace '893 would have failed to suggest the process of claim 22, Grace '893, Eiben and Webster would have failed to suggest the process of claims 24-28.

A *prima facie* case of obviousness has not been established. Applicants respectfully request that this rejection be reconsidered and withdrawn.

C. Claims 30-35, 37-40 and 43

Claims 30, 38 and 39 have been canceled. With respect to claims 31-35, 37, 40 and 43, Applicants provide the following remarks.

Claim 31 has been amended herein to recite a carbon dioxide frothing process for making a polyurethane foam composition comprising adding from about 5 to about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam; mixing a melamine and polyol pre-blend under high shear prior to foaming to form a blend; removing melamine agglomerations from the blend by filtering the blend through a first filter; injecting liquefied carbon dioxide into the blend; mixing the blend; filtering the blend through a second filter; and conveying the blend into a gate bar, wherein the foam composition produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test.

One of ordinary skill in the art would not have been motivated to modify the disclosure of Grace '893, Eiben and Webster in an attempt to obtain the claimed carbon dioxide frothing process. Moreover, even in combination, Grace '893, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed process.

Claims 32-35, 37, 40 and 43 depend, either directly or indirectly, from independent claim 31. Hence, for at least the same reasons that Grace '893, Eiben and Webster would have failed to suggest the process of claim 31, Grace '893, Eiben and Webster would have failed to suggest the process of claims 32-35, 37, 40 and 43.

A *prima facie* case of obviousness has not been established. Applicants respectfully request that this rejection be reconsidered and withdrawn.

III. The Rejection Under 35 U.S.C. § 102(b) Over Ricciardi Should Be Withdrawn

At page 8 of the Office Action, the Examiner rejected claims 1, 3-28, 41 and 42, under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 4,757,093 to Ricciardi *et al.* (hereinafter "Ricciardi"). Applicants respectfully traverse this rejection.

A. Claims 1, 3-21, 41 and 42

Claims 18 and 19 have been canceled. With respect to claims 1, 3-17, 20, 21, 41 and 42, Applicants provide the following remarks. Independent claim 1 has been amended herein to recite a polyurethane foam comprising less than about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the foam passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, wherein the melamine is ground melamine, and wherein the ground melamine has a volume average particle size distribution of 100% ≤ about 74 microns, 75% ≤ about 19.25 microns, 50% ≤ about 12.28 microns, 25% ≤ about 6.84 microns, 0% ≤ about 0.83 microns.

Ricciardi fails to teach a polyurethane foam that contains ground melamine having the size distribution recited in claim 1. Therefore, Ricciardi fails to teach the polyurethane foam of claim 1.

Claims 3-17, 20, 21, 41 and 42 depend, either directly or indirectly, from independent claim 1. Hence, for at least the same reasons that Ricciardi fails to teach the polyurethane foam of claim 1, Ricciardi fails to teach the polyurethane foam of claims 3-17, 20, 21, 41 and 42.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

B. Claims 22-28

Claim 23 has been canceled. With respect to claims 22 and 24-28, Applicants provide the following remarks.

As amended herein, independent claim 22 recites a slab stock process for making a polyurethane foam comprising adding from about 5 to about 10 weight percent ground melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the melamine has a mean particle size of about 28 microns or less, wherein the foam produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, and wherein the ground melamine has a volume average particle size distribution of 100% \leq about 74 microns, 75% \leq about 19.25 microns, 50% \leq about 12.28 microns, 25% \leq about 6.84 microns, 0% \leq about 0.83 microns.

Ricciardi fails to teach a slab stock process for making a polyurethane foam using ground melamine having the size distribution recited in claim 22. Therefore, Ricciardi fails to teach the process of claim 22.

Claims 24-28 depend, either directly or indirectly, from independent claim 22. Hence, for at least the same reasons that Ricciardi fails to teach the process of claim 22, Ricciardi fails to teach the process of claims 24-28.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

C. Claims 30-35, 37-40 and 43

Claims 30, 38 and 39 have been canceled. With respect to claims 31-35, 37, 40 and 43, Applicants provide the following remarks.

Claim 31 has been amended herein to recite a carbon dioxide frothing process for making a polyurethane foam composition comprising adding from about 5 to about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam; mixing a melamine and polyol pre-blend under high shear prior to foaming to form a blend; removing melamine agglomerations from the blend by filtering the blend through a first filter; injecting liquefied carbon dioxide into the blend; mixing the blend; filtering the blend through a second filter; and conveying the blend into a gate bar, wherein the foam composition produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test.

Ricciardi fails to teach a carbon dioxide frothing process in which liquified carbon dioxide is injected into a blend that contains melamine and a polyol. Ricciardi also fails to teach a process in which the blend is conveyed into a gate bar. Therefore, for at least these reasons, Ricciardi fails to teach the process of claim 31.

Claims 32-35, 37, 40 and 43 depend, either directly or indirectly, from independent claim 31. Hence, for at least the same reasons that Ricciardi fails to teach the process of claim 31, Ricciardi fails to teach the process of claims 32-35, 37, 40 and 43.

Applicants respectfully request that this rejection be reconsidered and withdrawn.

IV. The Rejection Under 35 U.S.C. § 103 Over Ricciardi In View Of Eiben and Webster Should Be Withdrawn

At page 9 of the Office Action, the Examiner rejected claims 1, 3-28, 30-35, and 37-43, under 35 U.S.C. § 103(a), as allegedly obvious over Ricciardi in view of Eiben and Webster. Applicants respectfully traverse this rejection. A *prima facie* case of obviousness has not been established.

A. Claims 1, 3-21, 41 and 42

Claims 18 and 19 have been canceled. With respect to claims 1, 3-17, 20, 21, 41 and 42, Applicants provide the following remarks. Independent claim 1 has been amended herein to recite a polyurethane foam comprising less than about 10 weight percent melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the foam passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, wherein the melamine is ground melamine, and wherein the ground melamine has a volume average particle size distribution of 100% <= about 74 microns, 75% <= about 19.25 microns, 50% <= about 12.28 microns, 25% <= about 6.84 microns, 0% <= about 0.83 microns.

A *prima facie* case of obviousness has not been established, because even in combination, Ricciardi, Eiben and Webster would not have suggested a polyurethane foam that contains ground melamine having the size distribution recited in claim 1.

Ricciardi relates to a flame retardant melamine containing polyurethane foam in which between 15 and 500 percent by weight melamine is used to replace "a minor portion" of the amount of a liquid phosphorus ester flame retardant. *See Ricciardi, e.g.,* in the Title and the Abstract. Ricciardi defines a "minor portion" as meaning "less than

half." Ricciardi at column 3, lines 31-33. Thus, Ricciardi relates to replacing less than half of a liquid phosphorus ester flame retardant between 15 and 500 percent by weight melamine.

Eiben relates to the use of carbon dioxide as an expanding agent, but does not disclose melamine. Webster relates to a process for the production of a polymer, but does not disclose melamine.

One of ordinary skill in the art would not have been motivated to modify the disclosure of Ricciardi, Eiben and Webster in an attempt to obtain the claimed polyurethane using the claimed ground melamine size distribution. Moreover, even in combination, Ricciardi, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed polyurethane foam using the claimed size distribution of ground melamine.

Claims 3-17, 20, 21, 41 and 42 depend, either directly or indirectly, from independent claim 1. Hence, for at least the same reasons that Ricciardi, Eiben and Webster would have failed to suggest the polyurethane foam of claim 1, Ricciardi, Eiben and Webster would have failed to suggest the polyurethane foam of claims 3-17, 20, 21, 41 and 42.

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B. Claims 22-28

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As amended herein, independent claim 22 recites a slab stock process for making a polyurethane foam comprising adding from about 5 to about 10 weight percent ground melamine based on the total weight of the foam and less than about 10 weight percent of one or more additional flame retardant compounds based on the total weight of the foam, wherein the melamine has a mean particle size of about 28 microns or less, wherein the foam produced by the process passes the open flame resistance portion and the smoldering resistance portion of the California 117 Burn Test, and wherein the ground melamine has a volume average particle size distribution of 100% <= about 74 microns, 75% <= about 19.25 microns, 50% <= about 12.28 microns, 25% <= about 6.84 microns, 0% <= about 0.83 microns.

A *prima facie* case of obviousness has not been established, because even in combination, Ricciardi, Eiben and Webster would not have suggested a slab stock process that employs ground melamine having the size distribution recited in claim 1.

One of ordinary skill in the art would not have been motivated to modify the disclosure of Ricciardi, Eiben and Webster in an attempt to obtain the claimed process, which employs a particular ground melamine size distribution recited. Moreover, even in combination, Ricciardi, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed process using the claimed size distribution of ground melamine.

Claims 24-28 depend, either directly or indirectly, from independent claim 22. Hence, for at least the same reasons that Ricciardi would have failed to suggest the process of claim 22, Ricciardi, Eiben and Webster would have failed to suggest the process of claims 24-28.

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One of ordinary skill in the art would not have been motivated to modify the disclosure of Ricciardi, Eiben and Webster in an attempt to obtain the claimed carbon dioxide frothing process. Moreover, even in combination, Ricciardi, Eiben and Webster would not have provided a reasonable expectation of success in obtaining the claimed process.

Claims 32-35, 37, 40 and 43 depend, either directly or indirectly, from independent claim 31. Hence, for at least the same reasons that Ricciardi, Eiben and

Webster would have failed to suggest the process of claim 31, Ricciardi, Eiben and Webster would have failed to suggest the process of claims 32-35, 37, 40 and 43.

A *prima facie* case of obviousness has not been established. Applicants respectfully request that this rejection be reconsidered and withdrawn.

Conclusion

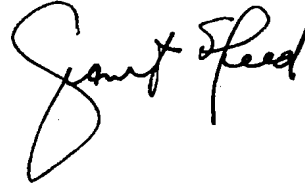
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all of the presently outstanding rejections. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Grant E. Reed". The signature is fluid and cursive, with the first name "Grant" and last name "Reed" clearly distinguishable.

Grant E. Reed
Attorney for Applicants
Registration No. 41,264

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1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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